Amendments to the claims

1. (Currently Amended) A ~~semiconductor chip mounting substrate~~ semiconductor device comprising:

a substrate having at least one integrally molded projection thereon~~, which is integrally molded with said substrate~~;

a first bump obtained by forming a conductive layer on said projection; and

a semiconductor chip having a terminal projecting as a second bump on its surface;

wherein said semiconductor chip is mounted on said substrate such that said first bump contacts said second bump, and said ~~semiconductor chip mounting substrate~~ semiconductor device comprises a pressure holding means for providing a required contact pressure between said first bump and said second bump,

wherein said contact pressure is within a range of 28 to 170 N/mm^2, at which said first bump is in an elastic deformation range, and said second bump is in a plastic deformation range.

2. (Currently Amended) The ~~semiconductor chip mounting substrate~~ semiconductor device as set forth in claim 1, wherein said pressure holding means is a resin material filled and cured in a space between said substrate and said semiconductor chip.

3. (Currently Amended) The ~~semiconductor chip mounting substrate~~ semiconductor device as set forth in claim 2, wherein said resin material has a coefficient of linear expansion greater than a material of said substrate.

4. (Currently Amended) The ~~semiconductor chip mounting substrate~~ semiconductor device as set forth in claim 3, wherein a difference in the coefficient of

linear expansion between said resin material and the material of said substrate is in a range of 5 X 10^{-6} / °C to 60 X 10^{-6} / °C.

5. (Currently Amended) The ~~semiconductor chip mounting substrate~~ semiconductor device as set forth in claim 1, wherein the surface roughness ~~(Ra)~~ of at least a top surface of said first bump is in a range of 0.1 to 3μm.

6. (Currently Amended) The ~~semiconductor chip mounting substrate~~ semiconductor device as set forth in claim 1, wherein a side of said first bump is a conductive-layer free surface, at which a side of said projection is exposed.

7. (Currently Amended) The ~~semiconductor chip mounting substrate~~ semiconductor device as set forth in claim 1, wherein said substrate comprises a second projection as a stopper, which has a height of preventing the occurrence of an excessive contact pressure between said first bump and said second bump when said semiconductor chip is mounted on said substrate.

8. (Currently Amended) The ~~semiconductor chip mounting substrate~~ semiconductor device as set forth in claim 1, wherein said substrate has a recess for receiving said second bump of said semiconductor chip in a top surface of said first bump.

9. (Currently Amended) The ~~semiconductor chip mounting substrate~~ semiconductor device as set forth in claim 1, wherein one of said first bump and said second bump has a surface layer of a metal material selected from tin and tin alloys, the other one has a gold layer, and wherein the ~~semiconductor chip mounting substrate~~ semiconductor device comprises a solid state diffusion layer of tin and gold formed at an interface between said first and second bumps.

10. (Currently Amended) The ~~semiconductor chip mounting substrate~~ semiconductor device as set forth in claim 1, wherein the material of said substrate has an elastic modulus of 5 GPa or more.

11. (Currently Amended) The ~~semiconductor chip mounting substrate~~ semiconductor device as set forth in claim 1, wherein said conductive layer includes a nickel layer having a thickness of 5 μm or more.

12. (Currently Amended) The ~~semiconductor chip mounting substrate~~ semiconductor device as set forth in claim 2, wherein said at least one projection is a plurality of projections, and said substrate has a concave between adjacent projections, in which said resin material is filled.

13. (Currently Amended) The ~~semiconductor chip mounting substrate~~ semiconductor device as set forth in claim 1, wherein said first bump is pressed against said second bump through a cushion member of a metal material having a high plastic-deformation capability.

14. (Currently Amended) The ~~semiconductor chip mounting substrate~~ semiconductor device as set forth in claim 1, wherein said first bump is of a tapered shape having a flat top end, and a value determined by dividing a height of said first bump by a diameter of a circle having substantially the same area as a base of said first bump is 0.5 or more.

15. (Currently Amended) The ~~semiconductor chip mounting substrate~~ semiconductor device as set forth in claim 1, wherein said substrate has a concave, in which said semiconductor chip can be incorporated,

said first bump is integrally molded at a bottom surface of said concave with said substrate,

said pressure holding means is a pressure holding member having a first surface adapted to contact a surface opposed to said second bump of said semiconductor chip, and a second surface extending around said first surface,

wherein the second surface of said pressure holding member is bonded to said substrate such that the first surface of said pressure holding member pushes said semiconductor chip placed in said concave toward said substrate, to thereby provide the required contact pressure between said first bump and said second bump.

16. (Currently Amended) ~~The semiconductor chip mounting substrate as set forth in claim 15~~ A semiconductor device comprising:

a substrate having at least one projection thereon, which is integrally molded with said substrate;

a first bump obtained by forming a conductive layer on said projection; and

a semiconductor chip having a terminal projecting as a second bump on its surface;

wherein said semiconductor chip is mounted on said substrate such that said first bump contacts said second bump, and said semiconductor device comprises a pressure holding means for providing a required contact pressure between said first bump and said second bump,

wherein said substrate has a concave, in which said semiconductor chip can be incorporated,

said first bump is integrally molded at a bottom surface of said concave with said substrate,

said pressure holding means is a pressure holding member having a first surface adapted to contact a surface opposed to said second bump of said semiconductor chip, and a second surface extending around said first surface,

wherein the second surface of said pressure holding member is bonded to said substrate such that the first surface of said pressure holding member pushes said semiconductor chip placed in said concave toward said substrate, to thereby provide the required contact pressure between said first bump and said second bump,

wherein said pressure holding member has a conductive film on at least said first surface, and a first metal film formed on said second surface so as to make an electrical connection with said conductive film, said substrate has a second metal film on a top surface around said concave, and

wherein the said pressure holding member is bonded to said substrate through an alloy layer generated at an interface between said first metal film and said second metal film.

17. (Currently Amended) The ~~semiconductor chip mounting substrate~~ semiconductor device as set forth in claim 15, wherein said pressure holding member is bonded to said substrate such that an interior of said concave is sealed in air-tight manner.

18. (Currently Amended) ~~The semiconductor chip mounting substrate as set forth in claim 15~~ A semiconductor device comprising:

a substrate having at least one projection thereon, which is integrally molded with said substrate;

a first bump obtained by forming a conductive layer on said projection; and

a semiconductor chip having a terminal projecting as a second bump on its surface;

wherein said semiconductor chip is mounted on said substrate such that said first bump contacts said second bump, and said semiconductor device comprises a

pressure holding means for providing a required contact pressure between said first bump and said second bump,

wherein said substrate has a concave, in which said semiconductor chip can be incorporated,

said first bump is integrally molded at a bottom surface of said concave with said substrate,

said pressure holding means is a pressure holding member having a first surface adapted to contact a surface opposed to said second bump of said semiconductor chip, and a second surface extending around said first surface,

wherein the second surface of said pressure holding member is bonded to said substrate such that the first surface of said pressure holding member pushes said semiconductor chip placed in said concave toward said substrate, to thereby provide the required contact pressure between said first bump and said second bump, and

wherein said semiconductor chip is an optical element, and said pressure holding member has an aperture in the first surface, through which a transmission of light between said optical element placed in said concave and an outside of the ~~semiconductor chip mounting substrate~~ semiconductor device becomes possible.

19. (Currently Amended) ~~The semiconductor chip mounting substrate as set forth in claim 15~~ A semiconductor device comprising:

a substrate having at least one projection thereon, which is integrally molded with said substrate;

a first bump obtained by forming a conductive layer on said projection; and

a semiconductor chip having a terminal projecting as a second bump on its surface;

wherein said semiconductor chip is mounted on said substrate such that said first bump contacts said second bump, and said semiconductor device comprises a pressure holding means for providing a required contact pressure between said first bump and said second bump,

wherein said substrate has a concave, in which said semiconductor chip can be incorporated,

said first bump is integrally molded at a bottom surface of said concave with said substrate,

said pressure holding means is a pressure holding member having a first surface adapted to contact a surface opposed to said second bump of said semiconductor chip, and a second surface extending around said first surface,

wherein the second surface of said pressure holding member is bonded to said substrate such that the first surface of said pressure holding member pushes said semiconductor chip placed in said concave toward said substrate, to thereby provide the required contact pressure between said first bump and said second bump, and

wherein said semiconductor chip is an optical element, and said pressure holding member has a window portion made of an optically transparent material, through which a transmission of light between said optical element placed in said concave and an outside of the ~~semiconductor chip mounting substrate~~ semiconductor device becomes possible.

20. (Currently Amended) ~~The semiconductor chip mounting substrate as set forth in claim 15~~ A semiconductor device comprising:

a substrate having at least one projection thereon, which is integrally molded with said substrate;

a first bump obtained by forming a conductive layer on said projection; and

a semiconductor chip having a terminal projecting as a second bump on its surface;

wherein said semiconductor chip is mounted on said substrate such that said first bump contacts said second bump, and said semiconductor device comprises a pressure holding means for providing a required contact pressure between said first bump and said second bump,

wherein said substrate has a concave, in which said semiconductor chip can be incorporated,

said first bump is integrally molded at a bottom surface of said concave with said substrate,

said pressure holding means is a pressure holding member having a first surface adapted to contact a surface opposed to said second bump of said semiconductor chip, and a second surface extending around said first surface,

wherein the second surface of said pressure holding member is bonded to said substrate such that the first surface of said pressure holding member pushes said semiconductor chip placed in said concave toward said substrate, to thereby provide the required contact pressure between said first bump and said second bump, and

wherein at least a part of said ~~semiconductor chip mounting substrate~~ semiconductor device is encapsulated in a second substrate of a resin material, so that a shrinkage caused by curing of said resin material increases the contact pressure between said first bump and said second bump through said pressure holding member.

21. (Currently Amended) The ~~semiconductor chip mounting substrate~~ semiconductor device as set forth in claim 20, wherein said semiconductor chip is an optical element, and said pressure holding member has a window portion made of an optically transparent material, said second substrate has a aperture, and

wherein a transmission of light between said optical element placed in said concave and an outside of the ~~semiconductor chip mounting substrate~~ semiconductor device becomes possible through said window portion and said aperture.

22.-26. (Canceled)

27. (New) The semiconductor device as set forth in claim 1, wherein said contact pressure is within a range of 57 to 110 N/mm^2.